

GUIDELINE	PERFORMANCE	EXCEPTIONS
<p>1) Events Requiring Investigation</p> <p>a) Establish criteria for when to perform an investigation</p> <p>b) List specific events requiring investigation</p> <p>c) Establish criteria for a "near miss" situation</p> <p>d) The following events require investigation:</p> <p>i) Violation of design limits</p> <p>ii) Unusual, abnormal, or unexplained performance or safety conditions</p> <p>iii) Improper positioning of safety system features</p> <p>iv) Unexplained shutdown</p> <p>v) Violation of a procedure or human error which could have serious implications</p> <p>vi) Failure of equipment with safety implications</p> <p>vii) Exceeding radiological or toxic substance limits</p> <p>viii) Actual or attempted sabotage</p>	<p>1) Events Requiring Investigation</p> <p>a) Criteria for when to perform an investigation are given in <a href="#">OPM 10.1</a>, "Occurrence Reporting and Processing of Significant Operations Information", <a href="#">OPM 9.4.5</a>, "C-A Accident/Incident Investigation," and SBMS Subject Areas <a href="#">Occurrence Categorizer's Procedure</a> and <a href="#">Investigation of Incidents, Accidents and Injuries</a>. An on-duty ORPs Categorizer is available at all times by calling 631-433-0443.</p> <p>b) Specific events requiring investigation at the C-AD are defined in the Subject Area and the <a href="#">ORPs Categorizer's Procedure</a>. Categorizers are trained to assist managers in determining the need to classify and criteria used. Events requiring investigation in accordance with DOE Orders are identified in SBMS Subject Areas <a href="#">Occurrence Categorizer's Procedure</a> and <a href="#">Investigation of Incidents, Accidents and Injuries</a>.</p> <p>c) Criteria for a near miss are given in <a href="#">OPM 10.1</a> and in the <a href="#">Occurrence Categorizer's Procedure</a> administered by the Quality Management Office.</p> <p>d) <a href="#">OPM 10.1</a> , <a href="#">OPM 9.4.5</a> and the <a href="#">Occurrence Categorizer's Procedure</a> establishes the following as events requiring investigation:</p> <p>i) Violation of design limits</p> <p>ii) Unusual, abnormal or unexplained performance or safety conditions</p> <p>iii) Improper positioning of safety system features</p> <p>iv) Unexplained shutdown</p> <p>v) Violation of a procedure or human error which could have serious implications</p> <p>vi) Failure of equipment with safety implications</p> <p>vii) Exceeding radiological or toxic substance limits</p>	<p>1) Events Requiring Investigation</p> <p>None</p>

**FACILITY: COLLIDER ACCELERATOR DEPARTMENT**  
**CHAPTER: VI "INVESTIGATION OF ABNORMAL EVENTS"**

**DATE:** 6/08/06  
**PAGE:** 2 of 5

<b>GUIDELINE</b>	<b>PERFORMANCE</b>	<b>EXCEPTIONS</b>
ix) Review committee deems an investigation is necessary x) Loss of Special Nuclear Material xi) Occurrence of repetitive problem	viii) Actual or attempted sabotage ix) Whenever a review committee deems an investigation is necessary x) Loss of Special Nuclear Material xi) Occurrence of repetitive problem	
2) Investigation Responsibility a) Manager has ultimate responsibility for consistency and thoroughness of event investigation	2) Investigation Responsibility a) The C-AD Department Chairman is named the C-AD Facility Manager and has the ultimate responsibility to conduct a consistent and thorough investigation, see <a href="#">OPM 10.1</a> , "Occurrence Reporting and Processing of Significant Operations Information"	2) Investigation Responsibility None
3) Investigator Qualification a) Investigators should be knowledgeable with no vested interest or bias  b) Investigators should be trained	3) Investigator Qualification a) BNL staff members from the ESHQ Directorate and other BNL technical experts are available to assist the C-AD subject matter experts in investigations. The <a href="#">Occurrence Reporting and Processing System (ORPs)</a> ; <a href="#">Investigation of Incidents, Accidents and Injuries</a> ; and <a href="#">Critiques</a> subject areas provide guidance for responsible investigators. This team approach helps ensure an unbiased investigation. b) Trained investigators are appointed to investigation committees	3) Investigator Qualification None
4) Information to be Gathered a) Collect the following information as soon as possible:  i) Initial condition of facility  ii) Statements of operators and other personnel iii) Logs and computer printouts	4) Information to be Gathered a) The initial actions by the Operations Coordinator or Supervisor are to take any actions necessary to make the area safe without endangering the health and safety of themselves or other personnel. The <a href="#">Occurrence Reporting and Processing System (ORPs)</a> ; <a href="#">Investigation of Incidents, Accidents and Injuries</a> ; and <a href="#">Critiques</a> Subject Areas detail these requirements. Initial information collection requirements include:  i) A record of date and time of the event, date and time of all notifications and initial condition of the facility  ii) A record based on operator statements regarding a step by step sequence of events leading to the incident if known. iii) Logs and computer printouts that are retrievable after an event.	4) Information to be Gathered None

GUIDELINE	PERFORMANCE	EXCEPTIONS
iv) Other pertinent documents	iv) Pertinent documents that are preserved in logbooks or binders for future reference.	
<p>5) Event Investigation</p> <p>a) Depending on their significance the format should include:</p> <p>i) Event Reconstruction</p> <p>(1) Develop chronological list</p> <p>(2) Include list of personnel involved</p> <p>ii) Event Analysis and Evaluation</p> <p>(1) Determine the response of equipment and personnel</p> <p>(2) Compare actual and expected responses</p> <p>(3) Determine adequacy of procedures and factors effecting performance</p> <p>(4) Compare event with prior events</p> <p>(5) Perform analysis to determine any detrimental effects that have occurred</p> <p>iii) Root-Cause Determination</p> <p>(1) Define casual factors that, if corrected, would preclude recurrence</p> <p>iv) Corrective Action Determination</p> <p>(1) Determine actions</p> <p>(2) Assign responsibility to implement the corrective actions.</p> <p>(3) Obtain final approval by Facility Manager. Can Include:</p> <p>(a) Changes in procedures</p> <p>(b) Training</p>	<p>5) Event Investigation</p> <p>a) The standard methods in <a href="#">Occurrence Reporting and Processing System (ORPS)</a> ; <a href="#">Investigation of Incidents, Accidents and Injuries</a> ; <a href="#">Critiques</a> and <a href="#">Corrective and Preventive Action</a> Subject Areas are used.</p> <p>i) These standard methods include event reconstruction</p> <p>ii) These standard methods include event analysis and evaluation</p> <p>iii) These standard methods include root cause determination</p> <p>iv) These standard methods include corrective action. Responsibilities to implement the corrective actions are formally assigned and approved by the Facility Manager, who is the C-AD Chair. The corrective actions are entered into the BNL Action Tracking System (<a href="#">ATS</a>)</p>	<p>5) Event Investigation</p> <p>None.</p>

GUIDELINE	PERFORMANCE	EXCEPTIONS
(c) Design Modifications (d) Change in administrative controls		
<p>6) Investigative Report</p> <p>a) Report should include:</p> <ul style="list-style-type: none"> <li>i) Description of the event</li> <li>ii) Impact of the event</li> <li>iii) Root causes of the event</li> <li>iv) Lessons learned from the event</li> <li>v) Proposed corrective actions</li> <li>vi) Any positive aspects of the event (correct actions taken or planned)</li> </ul> <p>b) The report should have the appropriate reviews and approvals</p>	<p>6) Investigative Report</p> <p>a) The C-AD uses the DOE ORPS reporting system and the requirements for <a href="#">Critiques</a> in SBMS. Critiques are used for all events including those not meeting the ORPs thresholds for reporting to DOE. All corrective actions are tracked in the <a href="#">BNL or C-AD ATS</a>. The format for reports follows requirements in the SBMS Subject Areas on <a href="#">Occurrences</a> and <a href="#">Critiques</a>. The ORPs form includes the topics listed in this Conduct of Operations guideline.</p> <p>b) ORPs reports and critiques require appropriate reviews and sign-offs as indicated in the relevant subject areas</p>	<p>6) Investigative Report</p> <p>None</p>
<p>7) Event Training</p> <p>a) Provide a mechanism to train personnel on aspects of the event in a timely fashion</p>	<p>7) Event Training</p> <p>a) Corrective actions requiring training are tracked by the BNL or C-AD <a href="#">ATS</a> and are closed out during the first available training evolution, if practical. For corrective actions requiring immediate implementation, changes to procedures and appropriate training are performed prior to restart of the effected facility. Department personnel are informed on events through event and/or facility specific training and weekly meetings with C-AD Divisions. Relevant "lessons Learned" information is provided to C-AD personnel via the C-AD and/or BNL Lessons Learned Coordinator.</p>	<p>7) Event Training</p> <p>None</p>
<p>8) Event Trending</p> <p>a) Track patterns of deficiencies, such as operator errors and inadequate procedures.</p>	<p>8) Event Trending</p> <p>a) The C-AD trends events and occurrence reports as part of its Performance Indicator Program. Annually, events and occurrence report experience is reviewed with C-AD and BNL management at the Environmental Management, OSH management and Self Assessment Review.</p>	<p>8) Event Trending</p> <p>None</p>

GUIDELINE	PERFORMANCE	EXCEPTIONS
b) Keep a summary of all events for review.	b) Archival ORPS reports and critiques may be found at <a href="#">C-AD Critiques</a> and <a href="#">C-AD ORPs Reports</a> . ORPs reports are also maintained at the DOE website, <a href="#">Occurrence Reporting &amp; Processing System</a> (password required).	
9) Sabotage a) There should be an immediate investigation to: i) Ensure operability of safety systems ii) Decide if facility should be shutdown  b) Minimize any impact of discovered sabotage and determine future actions	9) Sabotage a) Sabotage events are investigated by the BNL <a href="#">Safeguards and Security Division</a> who may be reached at 2222 or 911 for emergencies and 2238 for non-emergencies. C-AD supports the investigation to the extent requested by BNL Safeguards and Security Division and DOE.  b) Operators are trained to minimize the impacts of events including sabotage. BNL Safeguards and Security Division is notified of any suspected or actual sabotage event as soon as it is discovered.	9) Sabotage None